

SDST Science Advisory Panel (SAP) Meeting 24-25 October 1995 Meeting Minutes

Attendees:

Attending the SAP Meeting were:

Chris Justice (Chair)	(Land)
Jim Brown	(Oceans - Univ. of Miami)
Al Fleig	(SDST)
Jenny Glenn	(SDST - GSC)
Catherine Harnden	(SDST)
Mike Heney	(MAST - SSAI)
Luis Julio	(Land)
Ed Masuoka	(SDST)
Bob Murphy	(HQ)
Tom Piper	(SDST - GSC)
Kathy Strabala	(Atmospheres - Univ. of Wisconsin)
Steve Ungar	(SDST)
Robert Wolfe	(SDST)

Introduction:

Chris Justice opened the meeting. He indicated that the purpose of the SAP was to foster a closer working relationship between the MODIS Science Team and SDST. The purpose of this meeting was to identify issues and work on processes, not to get into programming details. It was determined that the SAP meetings would take place twice per year, out of phase with the Science Team Meetings.

Issues/Topics:

Issues concerning SDST were discussed from 3 different viewpoints - Science Team, GSC staff, and Contract Management. The intent was in part to familiarize the participants with the priorities and concerns of various parts of the MODIS team. The list of issues was compiled into a set of discussion topics. Discussion on some topics were deferred until other meetings, such as the Science Team Meeting (STM), and are so indicated.

Communication

The roles and responsibilities of the Science Team and SDST were outlined and discussed. A need for better communications between the groups in the MODIS team was emphasized. It was noted that the Science Team was not hearing any alarms re: software development. It was also noted that, although there are Science Team members on various panels, feedback from them has been sporadic. It was agreed that the mechanisms for good communications are in place through representation in various groups/panels, but this is an area that more attention should be paid to. A discussion of communications avenues and responsibilities followed, with several action items resulting.

TLCF and SCF

- sufficiency of resources

- production
- functionality
- networking
- responsibility for ancillary data
- staging

Hardware and networking issues were discussed. Overhead for using HDF (estimated at about 15% of CPU), code robustness (Fleig estimates doubling processing needs) were discussed. Availability of storage was raised as a concern, as well as network bandwidth between sites.

Version 1 software quality (Version 1 Plan, Version 2 Issues)

- Interface between products, processes, ancillary data
- Testing - kinds, plans, roles, and responsibilities (STM)
- Computer Resource Estimates - platforms/optimization
- Robustness (STM)
- Programmer Training
- QA Plan / Metadata (STM)

On the subject of testing, it was noted that the Science Team members are responsible for testing the science and robustness of their own algorithms; SDST will test interfaces and process flow. Delivered software should include a “test folder” with pointers to input and output data sets so that SDST can verify that their integration work has not changed the operation of the algorithms.

On programmer training, it was suggested that electronic communications between programmers be facilitated in order to share experiences, tools, and to avoid where possible the duplication of effort. A Programmer’s Forum will be held in conjunction with the November Science Team meeting; SAP concerns/suggestions will be represented there.

EOSDIS - MODIS interaction

- DAAC production hardware resources
- DAAC software interfaces to MODIS production software
- Utilities
- DAAC/SCF post-launch production readiness - QA functionality; ancillary data

INTERFACES

- SCF->STIG (Beta; V1)
- SCF-SDST Structures for interaction
- TT - SAP, Discussion Teams, Programmers
- MODIS - End User (IDS etc.)
- ESDIS - DAAC - MODIS (Hardware IDR)

Post-Launch Plan

- Data Release Plan and Quality

- Failure Plan (Detectors, ancillary Data, Hardware)

Lessons Learned

- Beta
- Pathfinder
- UARS

In the discussion of Lessons Learned from the Beta Delivery and experiences from other projects, one primary issue arose of delivery schedule. It was noted that the penalties for being late on Version 1 deliveries would be much more severe than for Beta, and that the experiences from Beta could help in developing a reasonable Version 1 delivery schedule that would allow SDST sufficient time to integrate the pieces delivered by the individual Science Team members. It was also noted that it is important to be aware of the purpose of the software deliveries for Version 1 and beyond, and focus on those issues. Specifically, it was noted that Version 1 was intended to test out interfaces and execute all processes - the robustness of the science algorithms themselves is secondary and can wait until Version 2.

Status reports on the Beta Version were provided, and experiences/concerns were discussed, and carried forward as appropriate for Version 1 planning.

Manpower

- SDST Functionality / manpower / structure
- '97 Concerns

Staffing concerns were discussed, with a focus on whether staffing resources are adequate for the task at hand. Staffing level reductions for the out-years due to budget cuts were outlined and discussed.

Priorities vs. End Goals (SDST/SCF; MODIS)

- Utilities
- Code Optimization
- Validation Responsibilities (including Data) (STM)

It would be useful on occasion to take some point in the future and look backwards, rather than projecting from the current point forward. At Launch, Launch+60 days, Launch+6 months, or Launch +1 year, where should the program be, and what is needed to get there? Considerations include TLCF/SCF capabilities, PGS, software status (QA), and a debugging plan.

Schedule

- Delivery Requirements
- L3 issues
- V1 Planning (including Testing) process (STM)
- V2 optimization
- Algorithm Refinement

A Version 1 tentative schedule was drawn up (below). Fleig gave a presentation on the Beta and Version 1 simulated data sets, describing the sets currently available and planned, and accepted feedback from the group on their simulated/synthetic data needs; a list of proposed data set enhancements was compiled for Fleig's consideration/action. Fleig also discussed the utilities that SDST was planning to provide, in order to ascertain that there was no misunderstanding about what SDST would/would not provide, and to make sure that SDST was not putting effort into utilities not needed/desired by the team. Metadata needs and requirements for Version 1 were discussed.

Version issues and requirements were discussed; it was noted that Version 2 is to be the "final" pre-launch code, due in Nov., 1997, and should include robustness, hardware and software optimization, the best possible science, and function as a production system test.

Version 1 Schedule:

A Version 1 Delivery schedule was worked up. The following Version 1 issues were identified:

- Version 1 due in Dec. 1996 at DAACs
- All standard MODIS products produced including L3 and L4
- Read Ancillary Data Inputs (tools identified)
 - Need to identify source of data
 - if using reprocessed data, need to arrange for it
- Identify QA flags for each MODIS product
- Baseline HDF File Spec for each data product (Inter-instrument ready)
 - Metadata implicit in this
- Expected at-launch volumes and loads
- Identify spatial and temporal resolution to ensure dependencies are met
- *Understand tradeoffs between MODIS Geolocation and Swaths
- *Verification that scheduling software selected will meet needs

Version 1 Schedule - Incremental Delivery **Proposed - DRAFT**

Level 1B and Level 2 Products due by Feb. 1996
All code due by the end of May 1996

Dec. '95	Level 1B QA flags defined Level 2 Metadata examples
Jan. '96	Beta Kaufman Level 3 Aerosol / Water Vapor
Feb. '96	All product specs, interfaces (esp. between Level 1B and Level 2) L1B delivered MOD35
Mar. '96	Land Level 2's - MOD 9/13/14 Atmosphere Level 2 Oceans - Productivity (SeaWiFS modified for MODIS I/O)
April '96	Atmosphere Level 3s. All other Land Level 2s
May '96	Land Level 2Gs Oceans - SST
Jun. '96	Land Level 3 and Level 4

Summary:

Feb. - Aug. 1996	Software Transfer Integration, acceptance, testing
Sep. - Nov. 1996	System Testing
Nov. 1996	Version 1 Packaging, delivery

Action Items:

- White Paper on At-Launch Scenarios (Discipline & SDST Reps)
- 1B QA Flags & L2 Metadata Template (Dec. '95)
Associated Test Data for Errors (with realistic problems)
- Focus on Cloud Mask & Flags (spec)
- Cloud Test Data (MODIS granule)
- White Paper on ECS metadata Fields & Functions
- Discipline Groups to Agree on Metadata Content for V1
(Robert Wolfe, Rich Hucek, Barry Herchenroder)
- Press for L3 Atmosphere Delivery for critical products (Jan 96)
Aerosols, Water Vapor
- Oceans SST and Reflectance (March 96)
- RW/RH/BH - Develop Refined Agreed-On Schedule for V1 delivery with ST
members before Sci Team Meeting
- V1 Ancillary data issues on Agenda for programmers Workshop (Strabala)
- Al Fleig - Talk with Menzel re Clouds in SIM2
- Test Data as Prototype MODIS L3 product (metadata etc.)
- Al Fleig - Sea Ice Simulation?
- Al Fleig/Robert Wolfe - Evaluate schedule of Simulated Data Delivery (2A/2B)
- Programmers Forum - Agenda/Chairfolk (Cross-Discipline)
- Assessment of computing resource needs for TLCF for V1 from the team (discipline
heads)
- Efficient Scheduling/Management of TLCF for V1
- Look at SCF/TLCF capacity - develop strawman plan for at-launch hardware
functionality (including network) (consider tradeoffs)
- Resolve current network problems - testing connectivity
- Discussion on Utilities/SDST Strawman at Programmers Forum
- Metadata - Pathfinder Experience (GOES/SeaWiFS/SMMI/HIRS/AVHRR/etc.) SDST
to look at previous models

Next SAP Meeting (Tentative)

Tue-Wed 27-28 Feb. 1996